

Team Meeting #19 Agenda, 2/9/21

- Debrief meeting from last Thursday, 2/9/21
 - Proof of concept
 - Direction for the project
 - Testing a bit later
 - Split into teams to create a true final device
- Ryan and Jett
 - Progress on the CAD model and quick demonstration
 - Circuit diagram and plan for implementation
 - 3D printing- Ender to MarkForged
 - Meeting again Tomorrow
- Maclean and Lucas
 - Output shaft modifications
 - Machining updates
 - Forward directions
- Part Ordering
 - New toggle switch from Adafruit
 - Perf board for circuits
 - Heat shrink tubing kit
- Final device for testing timeline
 - We would like to have the device assembled and functional by spring break
 - March 15th
 - Afterwards, we will spend the majority of the remaining time in the semester fixing any problems that it has and testing it to determine an optimal grit combination

Team Meeting #19 Minutes, 2/9/21

- Thursday Meeting
 - Moving to begin final prototype is approved
 - Our team system is working well thus far
 - Dr. Perry cautioned against creating a complete final device until we feel confident to test on the testbed
 - We will insert machined parts into testbed to verify function while developing the final device
- Driveshaft notes
 - Maclean and Lucas may need to redesign or output shaft key, as well as grease it. Dr. Perry provided a chart to help determine tolerances
 - Bill prefers the standard measurement system, and we would benefit from regular communications with him
 - Consider measuring friction and durability for metal types
 - On Thursday, we should go into the machine lab to find motor mount thread, length, and cap width for screws
 - We will meet again on Thursday to check hardware and develop a machining plan
- Handle Redesign

- Square face at front? We might update it to make it longer for the output shaft interface
- Ryan asked for the solenoid and potentiometer data sheet from Lucas
- Sheet metal shelf may be hard to source, Ryan asked for Dr. Perry's help
- Circuit
 - Jett had Lucas order a light-up toggle switch, momentary push button switch, heat-shrink kit, and potentiometer knob from Adafruit
 - Lucas said that the perf board should be here Thursday
- Final handle shell
 - We can use the MarkForged, cost will vary with reinforcements
 - Budget \$150ish for this print
 - We could try to print our sheet metal shelf too if we wanted
 - Consider onyx and carbon fiber
 - Less is more
 - MarkForged software will estimate cost
 - Jett has access to the MarkForged software
- Client meeting
 - How long should the knee shaft be beyond the end of the device?
 - Rigidity or strength in the handle?
 - Demo with the incorporated output shaft
 - Engineering Release Review needs to be scheduled and completed by next Friday
 - Focus on manufacturing
 - CAD models, prototyping plan
 - Bill of materials and budget updates
 - Wednesday evening?

Action Items

- **We will plan to meet as a team again on Thursday at 3:30 in person, and then we will have a client meeting Friday at 5:15p on Zoom**
- Jett will get set up on the MarkForged website and continue building the final circuit, as well as meet with Ryan tomorrow to offer circuitry input for the CAD model tomorrow at 3:30p
- Ryan will continue to develop the total CAD model based on each component, and incorporating them
- Lucas and Maclean will continue working on putting together the output shaft for our final device, as well as talk to Bill about costs associated with machining our key. Tolerances and metal types are of note to consider